

**Crystal Data:** Tetragonal. *Point Group:*  $\bar{4}2m$ . As crystals composed of pyramids and prisms, to 2 mm, and in crusts.

**Physical Properties:** Hardness = Soft.  $D(\text{meas.}) = 2.23$   $D(\text{calc.}) = 2.34$  (from cell-dimension charts). Soluble in  $\text{H}_2\text{O}$ .

**Optical Properties:** Translucent. *Color:* Buff to colorless. *Streak:* White.  
*Optical Class:* Uniaxial (-).  $\omega = 1.513$   $\epsilon = 1.470$

**Cell Data:** *Space Group:*  $I\bar{4}2d$  (synthetic  $\text{KH}_2\text{PO}_4$ ).  $a = 7.451(1)$   $c = 6.792(15)$   $Z = 4$

**X-ray Powder Pattern:** Synthetic  $\text{KH}_2\text{PO}_4$ . (ICDD 35-807).  
3.724 (100), 2.908 (83), 1.953 (51), 2.635 (23), 2.340 (15), 5.086 (14), 3.008 (14)

**Chemistry:**

	(1)
$\text{K}_2\text{O}$	10.8
$\text{NH}_3$	3.46
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Total	

(1) Petrogale Cave, Western Australia; partial analysis, corresponding to  $[\text{K}_{0.74}(\text{NH}_4)_{0.26}]_{\Sigma=1.00} \text{H}_2\text{PO}_4$ .

**Occurrence:** As a component of stalactites and crusts on the walls of caves containing bat guano deposits.

**Association:** Biphosphammite, apthitalite, halite, syngenite, stercorite, oxammite, weddellite, whitlockite, guanine, newberyite, calcite, mundrabiliaite.

**Distribution:** In Petrogale Cave, near Madura, and in Murra-el-elevyn Cave, about 200 km east of Balladonia, Western Australia.

**Name:** Honors Dr. Michael Archer (1945- ), Curator of Mammals, Queensland Museum, Brisbane, Australia, who discovered the first specimens.

**Type Material:** Government Chemical Laboratories, Perth, Australia, MDC 5901.

**References:** (1) Bridge, P.J. (1977) Archerite,  $(\text{K}, \text{NH}_4)\text{H}_2\text{PO}_4$ , a new mineral from Madura, Western Australia. *Mineral. Mag.*, 41, 33-35. (2) (1977) *Amer. Mineral.*, 62, 1057 (abs. ref. 1). (3) West, J. (1930) A quantitative X-ray analysis of the structure of potassium dihydrogen phosphate ( $\text{KH}_2\text{PO}_4$ ). *Zeits. Krist.*, 74, 306-332.